# Joint SECAP – Gorenjska region

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- The Joint SECAP for Gorenjska region marks the start of a long-term process aiming to identify and implement energy efficiency actions; to provide citizens with access to safe, sustainable and affordable energy; and to adapt to climate change.
- The SECAP aims to create a more efficient city with new energy sources, and smart networks and services, a city that moves in a smarter way, supported by a low-carbon economy, and a city that is also greener, more resilient and more environmentally aware.





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# Gorenjska region in numbers

DATA FOR 2020	REGION	SLOVENIA
Surface area (sq. km) - 1 January	2,137	20,271
Population - Total - 1 July	207,842	2,100,126
Population density - 1 July	97.3	103.6
Mean age (years) - 1 July	43.2	43.6
Total increase per 1,000 population	20.5	6.2
Number of persons in paid employment (by work place)	67,343	794,623
Employment rate (%)	68.4	65.6
Average monthly net earnings per person (EUR)	1,171.63	1,208.65
Turnover of enterprises (1,000 EUR)	7,945,718	113,691,184
Average age of passenger cars - 31 December	10.2	10.4









#### Joint SECAP – Gorenjska region

- SECAP Gorenjska was prepared in accordance with the methodology of the Covenant of Mayors for Climate Change and Energy
- Under SECAP option 2 a group of municipalities registered as one signatory, which has to submit only one document, approved by the municipal council of each municipality.
- Milestones:
  - developed communication participatory strategy,
  - determination of the base year 2005,
  - identification of areas of treatment (A and M),
  - established partnerships for the implementation of common policies, programs, projects
  - confirmation in all municipalities of the region 18 decisions.



#### Joint Sustainable Energy and Climate Action Plan

Option 2

I, Mag. Miha Ješe, Mayor of Municipality Škofja Loka have been mandated by the Municipal Council on 20.9.2018 to sign up to the Covenant of Mayors for Climate and Energy as part of the group named Gorenjska, composed of Municipalities Bled, Bohinj, Cerklje na Gorenjskem, Gorenja vas – Poljane, Gorje, Jesenice, Jezersko, Kranjska Gora, Kranj, Naklo, Preddvor, Radovljica, Šenčur, Škofja Loka, Tržič, Železniki, Žiri, Žirovnica, in full knowledge of the commitments set out in the official <u>Commitment Document</u> and summarised below.

Therefore, my local authority principally commits to:

- Collectively reducing CO<sub>2</sub> (and possibly other greenhouse gas) emissions on our joint territories by at least 40% by 2030, namely through improved energy efficiency and greater use of renewable energy sources;
- Increasing our resilience by adapting to the impacts of climate change.

In order to translate these commitments into action, my local authority as part of the group undertakes to fulfil the following step-by-step approach:

- Jointly carry out a Baseline Emissions Inventory and a Climate Change Risk and Vulnerability Assessment;
- Submit a joint Sustainable Energy and Climate Action Plan within two years following the above date of the municipal council decision;
- Report progress at least every second year following the submission of the Sustainable Energy and Climate Action Plan for evaluation, monitoring and verification purposes.

I accept that our group of local authorities shall be suspended from the initiative – subject to prior notice in writing by the Covenant of Mayors Office – in case of non-submission of the above-mentioned documents (i.e. Sustainable Energy and Climate Action Plan and Progress Reports) within the established deadlines.

#### Municipality Škofja Loka, Mestni trg 15, 4220 Škofja Loka, Slovenia Tatjana Bernik, tatjana.bernik@skofjaloka.si; 003864 5112 341



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### **Communication - participatory strategy**

- Sector analysis
- Stakeholders 'analysis
- Identification of intercorrelations between stakeholders
- Integration plan and method of communication with each stakeholder
- Monitoring the performance of participatory communication strategy
- INDICATORS
  - number of people involved in the preparation / adoption of SECAP Gorenjska: 500
  - number of established project partnerships: 14
  - number of published articles, interviews: 10 articles, 2 radio broadcasts.





## Preparation

CEE

	Dedicated to the vision, the overall CO2	PART I - MITIGATION
	emissions reduction target(s), the	facilities
Strategy	adaptation goals, the attribution of staff and financial capacities and the involvement of stakeholders and citizens.	<ul> <li>residential buildings</li> <li>municipal public lighting</li> <li>traffic</li> </ul>
Emission Inventories	Dedicated to the amount of final energy consumption and associated CO <sub>2</sub> emissions by energy carrier and by sector in the base year.	Image: Second processing of the second procesecond processing of the second processing of
Mitigation Actions	Dedicated to the list of key mitigation actions to put the overall strategy into action, together with time frames, assigned responsibilities, allocated budgets and estimated impacts.	
Scoreboard	Dedicated to understanding the areas of the adaptation cycle in which the signatory has made progress.	Duildings     Commo     1,443,33     2 th most     393,64     commo     commo     th most       Authin a mejorie updated (invide)     Desemine else underse protein entra.     industry     /     1,555,26     7,7     553,281     /     /       Industry     /     1,555,26     7,9     /     7,7     553,281     /     /       Industry     /     1,555,26     7,9     /     7,7     553,281     /     /       Industry     /     1,555,26     7,9     /     7,7     553,281     /     /       Image: The second of the second of the postmetry or second of the postmetry of the postm
Risks and Vulnerabilities	Dedicated to the climate vulnerabilities, hazards as well as the impacts and assessments thereof.	OROČENOST 2017       OROČENOST 2017       Priligodili.         OROČENOST 2017       OROČENOST 2017       OROČENOST 2017         V ratek opis ukrepa       Kratek opis ukrepa       Bra za predore v gorskih območjih, vladukte na območjih pogistih
Adaptation Actions	Dedicated to the Action Plan(s) and individual (key) actions, including various relevant parameters (i.e. sector, timeframe, stakeholders and cost)	Področje ukrepanja modalni premik k javnemu prevozu / preusmenitev modalni premik k javnemu prevozu / preusmenitev modalni premik k javnemu prevozu / preusmenitev modalnega istema na hojo in kolesarjenje / delitev je / delitev / delitev je

## SECAP Gorenjska

<ul> <li>PART I - MITIGATION</li> <li>municipal buildings, ec</li> <li>residential buildings</li> <li>municipal public lightin</li> <li>traffic</li> </ul>	ART I - MITIGATION municipal buildings, equipment / facilities residential buildings municipal public lighting traffic		Demonstration of climate change trendsExpected climate change and associated risks• Average annual temperature and extremes• Heat waves and hot days• Cold periods and cold days• Precipitation• Storms, hailstorms and days with rainfall above 20 mm
Apine Space mPEACE Alos	Characteristics of the region important from an energy point of view	Apine Space	<ul> <li>and above 50 mm</li> <li>Reference evapotranspiration</li> <li>Maximum flows and floods</li> <li>Water deficit</li> </ul>
TRAJNOSTNI ENERGETSKO-PODNEBNI NAČRT GORENJSKE	<ul> <li>Energy supply and use by energy systems</li> <li>Electricity</li> <li>Natural Gas</li> <li>Thermal energy (district heating)</li> <li>Energy supply and use by sectors</li> <li>Municipal public buildings</li> </ul>	TRAJNOSTNI ENERGETSKO-PODNEBNI NAČRT GORENJSKE PODNEBNI DEL	<ul> <li><u>Vulnerability and risk assessment for selected sectors</u> (transport, tourism, forestry)</li> <li>Assessment of potential impacts</li> <li>Assessment of adaptability</li> <li>Vulnerability assessment</li> <li>Risk assessment</li> </ul>
Zz: BSC, posłowno podporni center, d.o.o., Knaij, Regionalna nazvojna agencija Gorenjske     Izdelovalec: BNNRCDULL, trajposto okoljsko in energetsko upravljanje, razlskave in uobraževanje, d.o.o.     St. projekta: 036/2018     Datum izdelove: maj 2018	<ul> <li>Municipal public lighting</li> <li>Residential buildings</li> <li>Industry</li> </ul>	Zer         BSC, poliskomo nodpomi center, d.a.o., Kragi, Regionalna razvojna agrecija Govenplac           Izdeforvatec:         DVNRDCULAI, trajinostno okoljsko in exergetsko upravljavje, raslikave in sobražnavaje, d.o.o.           St. projekta:         054/2018           Datum ladelave:         decomber 2018	
	Basic emission records Vision and goals of		
	Gorenjska	<ul> <li>Adaptation measures</li> <li>Adaptation measures</li> </ul>	



#### Natural gas supply and use



	dolžina omrežja (m)	število priključkov	neaktivni priključki
Bled	63.379	1.541	917
Cerklje na Gorenjskem	34.746	305	260
Gorje	2.189	33	28
Jesenice	57.030	1.286	214
Kranj	212.616	3.707	1.708
Naklo	30.215	302	124
Radovljica	66.940	1.259	335
Šenčur	31.072	217	134
Škofja Loka	59.836	1.059	401
Tržič	38.366	629	339
Žirovnica	36.529	548	127
skupaj	632.918	10.886	4.587

- gas distribution network built in 11 municipalities - Bled, Cerklje na Gorenjskem, Gorje, Jesenice, Kranj, Naklo, Radovljica, Šenčur, Škofja Loka, Tržič and Žirovnica
- 5 companies that are operators of the natural gas distribution system - Petrol d.d., Domplan d.d., Adriaplin d.o.o., Enos d.d., Jeko d.o.o.
- network length 633 km, 10,886 connections, 4,587 inactive (42%)





#### Electricity supply and use



Three distribution companies:

- Elektro Gorenjska d.d. 15 municipalities
- o Elektro Ljubljana d.d. 3 municipalities
- o Elektro Primorska d.d. 1 municipality





#### **Production of Electricity**

- the most common solar power plants, followed by hydroelectric and CHP
- by installed capacity the most represented hydroelectric power plants (32MW), solar power plants (20 MW)
- most electricity is produced by hydroelectric power plants
- the municipalities of Bohinj, Kranj and Tržič stand out in terms of the amount of electricity produced.







#### **District heating - supply**

- various forms of implementation of district heat supply - public utility service, companies, private systems
- district heating systems as public utility or market activity in 6 municipalities

	dolžina omrežja (m)	število odjemnih mest (toplotnih postaj)	število komitentov	
Bled	670	4	10	
Gorenja vas - Poljane	np	np	np	
Jesenice	32.000	224	4.267	
Jesenice - Hrušica	740	11	np	
Kranjska Gora - Kranjska Gora	336	6	np	
Kranjska Gora - Mojstrana	440	9	np	
Preddvor	6.654	123	np	
Železniki	12.230	359	682	





#### Small combustion plants

- 42,194 heating devices registered (Aug 2017)
- by energy source:
  - 45.6% wood
  - 35.4% ELHO
  - 17.3% natural gas
  - 1.7% LPG
- average age of devices 16 years:
  - ELHO 19 years
  - wood 17 years
  - natural gas 13 years
  - LPG 13 years





	2005	2011	2016	2005	2011	2016	2030	% v 2030 glede na leto 2005	% v 2030 glede na leto 2016
	Končna poraba energije (MWh)			emisije CO <sub>2</sub> [t]/ emisije ekvivalentov CO <sub>2</sub> [t]			emisije CO <sub>2</sub> [t]/ emisije ekvivalentov CO <sub>2</sub> [t]		
občinske javne stavbe	60.097	56.606	50.728	18.626	17.544	16.212	11.793	36,7	27,2
javna razsvetljava	12.198	10.594	7.447	5.977	5.191	3.649	2.737	54,2	25
stanovanjske stavbe	1.457.215	1.443.330	1.307.262	393.646	267.845	230.085	175.965	55,3	23,5
industrija	/	1.585.266	1.759.490	1	529.717	583.281	1	1	/
promet	424.092	468.076	595.209	107.268	119.852	153.299	124.041	-15,6	19
skupaj				525.517			314.536	40.15	21,99

SEE

#### **II. PART - ADAPTATION**

Demonstration of climate change trends

#### Expected climate change and associated risks

- Average annual temperature and extremes
- Heat waves and hot days
- Cold periods and cold days
- Precipitation
- Storms, hailstorms and days with rainfall above 20 mm and above 50 mm
- Reference evapotranspiration
- Maximum flows and floods
- Water deficit

#### • Vulnerability and risk assessment for selected sectors (transport, tourism, forestry)

- Assessment of potential impacts
- Assessment of adaptability
- Vulnerability assessment
- Risk assessment



#### **Global warming**



RCP 8.5 refers to the concentration of carbon that delivers global warming at an average of 8,5 watts per square meter across the planet.





#### Temparature change (ARSO)

Change in **hot days** ( $T_{max} > 30 \ ^{\circ}C$ )



2041-2070

2041-2070

2071-2100

2071-2100



#### Change in icing days $(T_{min} < 0 \ ^{\circ}C)$





2041-2070

2041-2070





2071-2100

2071-2100



-10 -5 -20 -1 1 5 -50



## Summary (ARSO)

- Temparature will continue to rise (increased heat stress)
- Significant increase in winter percipitation
- Significant increase of extreme percipitation intesitiy
- Less snow
- Increased risk for flash droughts
- Increased high river flows (NW rivers)
- Increase of groundwater erecharge



- Creating an educational program for RES, EEU and climate change, which will maintain the competencies of key actors (construction, architecture, mechanical engineering, electrical engineering, environmental protection, project management in the energy and climate sector, etc.) and raise the competencies and knowledge of teachers, students and stakeholders public, which are now only available through the specialized programs of individual faculties, which benefits only a small number of people.
- providing continuous knowledge / competencies of key actors
- raising the technical knowledge of students in primary and secondary schools in Slovenia, which is at a low level, which is reflected in the lack of interest in continuing studies in this field.
- acquainting the economy and households with the technical and technological possibilities arising from the use of new and innovative forms.
- establishing better cooperation between industry and science in the field of energy efficiency and renewable energy sources by identifying needs and finding solutions
- provide infrastructure and equipment for school-age students as well as other interested parties (construction, architecture, mechanical engineering, electrical engineering, environmental protection, project management in the energy sector, etc.) for practical work.



#### **Regional Innovation Forum on Energy and Climate Change**

- Organizing a multi-day international meeting in the form of workshops and trainings by connecting with investors on the topic of energy and climate challenges in Gorenjska. The target groups are faculties, secondary and primary schools from Slovenia and other EU countries.
- As part of the workshops, measures are designed that represent innovation in terms of identified weak points or potentials in Gorenjska (residential buildings, public buildings, transport, public lighting or measures in the field of climate mitigation and adaptation, etc.)
- The forum will include all-day presentations of innovations and a selection of the most appropriate ones. The most relevant innovations will also be rewarded.
- Given the complexity of the innovation, in order to facilitate implementation, potential investors will also be invited to participate, who will agree with the innovators and the municipality on cooperation in the form of implementing innovation in each local community or several.
- With the implementation of the regional forum we want to acquaint young people with the challenges of sustainable development, to establish cooperation between educational institutions, industry and local government.



#### Energy rehabilitation of municipal buildings, equipment / facilities

- 219 public buildings were analyzed. Given the frequency of use of buildings, specific energy consumption and the state of insulation, the priority is the implementation or renovation of those facilities that have a higher energy number or. above 100 and 500 m2 kWh/m2 or heated by fossil fuels.
- In the 2007-2013 programming period, 36 buildings in the region were completely renovated. In the 2014-2020 programming period, a comprehensive energy renovation was carried out in 25 other public buildings of the Municipality of Kranj, 2 buildings of the Municipality of Bohinj, 1 building of the Municipality of Tržič, 1 building of the Municipality of Jesenice, 1 building of the Municipality of Gorenja vas-Poljane.
- Number of potential facilities that meet the above criteria: 42 facilities are still heated by Heating oil, energy number over 100 kWh / m2 and over 300 m2



### Establishement of working group ~ Council SECAP 1

- Establishment of working group/council SECAP in 2020 ٠
- Three meetings until today Establishment of priorities ٠
- •





#### Establishement of working group ~ Council SECAP 2

- Members of SECAP Council are representatives from:
  - Ministries
  - Municipalities
  - Companies
  - Faculty
  - Experts
- The tasks of the council are:
  - addressing issues in the field of SECAP,
  - making suggestions and guidelines,
  - giving professional assessments of implemented activities,
  - performing other tasks for implementation determined by SECAP Gorenjska.
- Four focus areas:
  - 1. Public awareness and promotion of energy and climate change.
  - 2. Improving air quality.
  - 3. Establishment of the Center for Renewable Energy Sources, Energy Efficiency and Climate Change.
  - 4. Energy poverty.



# Project proposals for preparation and implementation after confirmation of Council of the Gorenjska region

- A: Public Awareness and Promotion on Energy and Climate Change 30 points (1st place)
- A: Energy and Climate Change Education Program 29 points (2nd place)
- M: Improving air quality by reducing biomass emissions by 24 points (3rd place I / II)
  M: Improving air quality in urban centers measures such as traffic-free areas, traffic
- M: Improving air qualitý in urban centers measures such ás traffic-free areas, traffic restrictions, ecological taxes, improving public transport, bypasses, etc. 24 points (3rd place II / II)
- A: Air quality in buildings (air conditioning / ventilation) 23 points (5th place)
- M: Establishment of a Center for Renewable Energy Sources, Energy Efficiency and Climate Change (Center for Sustainable Energy and Climate Change ~ National Level) 21 points (6th place I / II)
- M: Energy poverty 21 points (6th place II / II)



#### **Circular economy**





#### **Energy poverty**



Jesenice, 17.3.2022





Kranj, 7.12.2021

#### Potential of heat reuse from municipal wastewater in Kranj Municipality







Settlement Kranjska Iskrica

**Communal zone** 





Progetto strategico co-finanziato dal Fondo europeo di sviluppo regionale Strateški projekt sofinancira Evropski sklad za regionalni razvoj

#### Air quality measurement in Kranj





### Green roof at Stane Žagar Primary School

- As part of the 2 ° Green Roof project worth 70,000 euros, the prostoRož studio and the Municipality of Kranj renovated 360 square meters of flat roof.
- It occupies 250 square meters with different types of greenery.
- The rest of the space on the roof is intended for outdoor classrooms, equipped with tables and benches for two classes of students (approx. 60 students).

# prostorož\*



MESTNA OBČINA KRANJ





- Eight Slovenian cities applied for the European Commission's Climate-Neutral and Smart Cities 2030 Mission, and three of them, Ljubljana, Kranj and Velenje, have been chosen to participate in the project, featuring in total of 100 cities.
- The 100 selected cities are now being invited to develop Climate City Contracts, which will include an overall plan for climate neutrality across all sectors such as energy, buildings, waste management, and transport, together with related investment plans. This process will involve citizens, research organisations, and the private sector.





# Thank you!

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